

28-29 May, 2024 - 1st Subregional Meeting on Environmental Assessments in a Transboundary Context

# Collection, harmonisation and sharing of environmental data to support decision making in the framework of Barcelona

Annalisa Minelli,  
*INFO/RAC Knowledge Management Officer*  
Arthur Pasquale,  
*INFO/RAC Deputy Director*  
Lorenza Babbini,  
*INFO/RAC Director*



Mediterranean  
Action Plan  
Barcelona  
Convention



MINISTERO DELL'AMBIENTE  
E DELLA SICUREZZA ENERGETICA



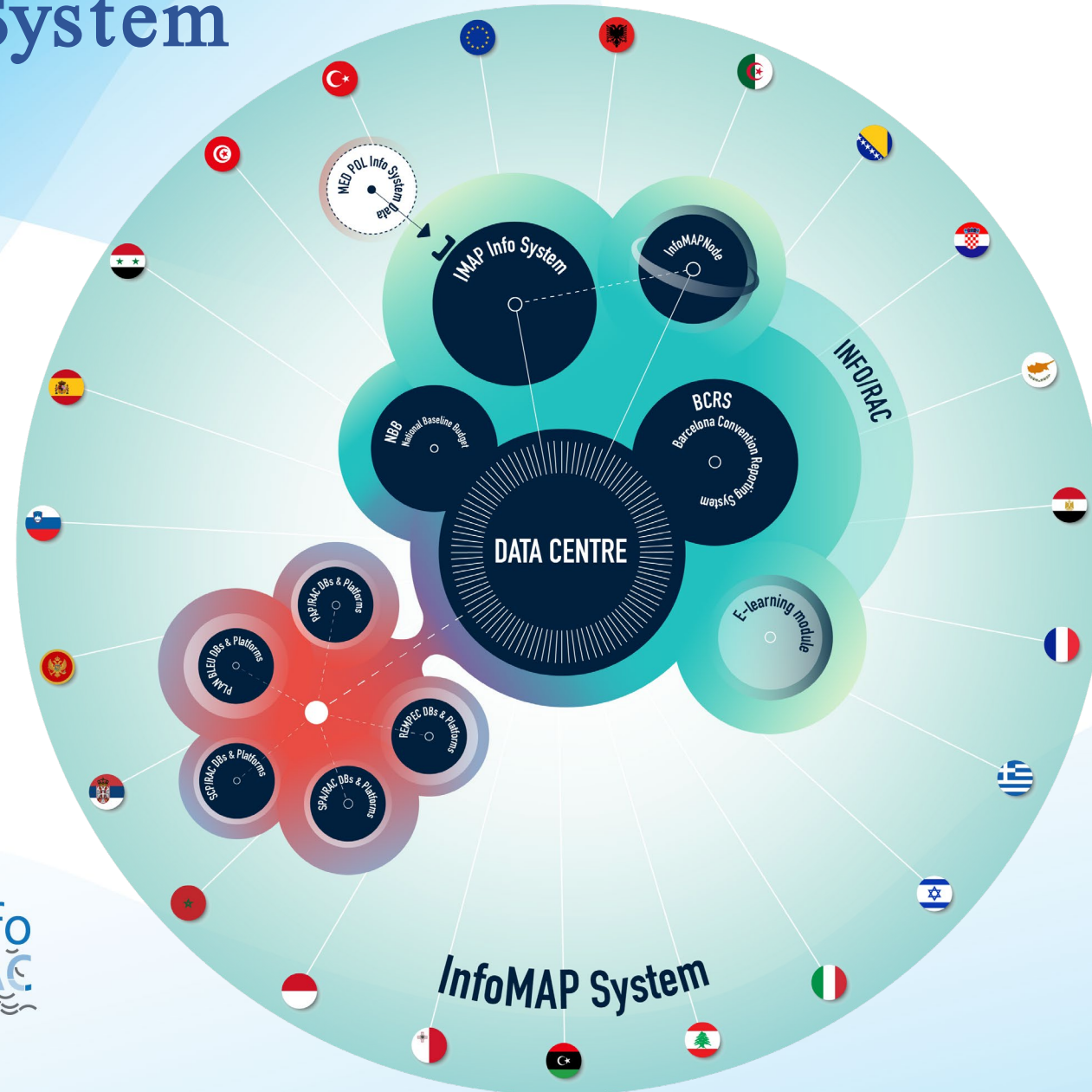
UNITED NATIONS  
ECONOMIC COMMISSION  
FOR EUROPE

# Outline of the presentation

- InfoMAP System and reporting systems
- The UNEP-MAP data policy
- The data policy implementation: KMaP
- From data to instruments for policy makers
- Future perspectives

# The InfoMAP System

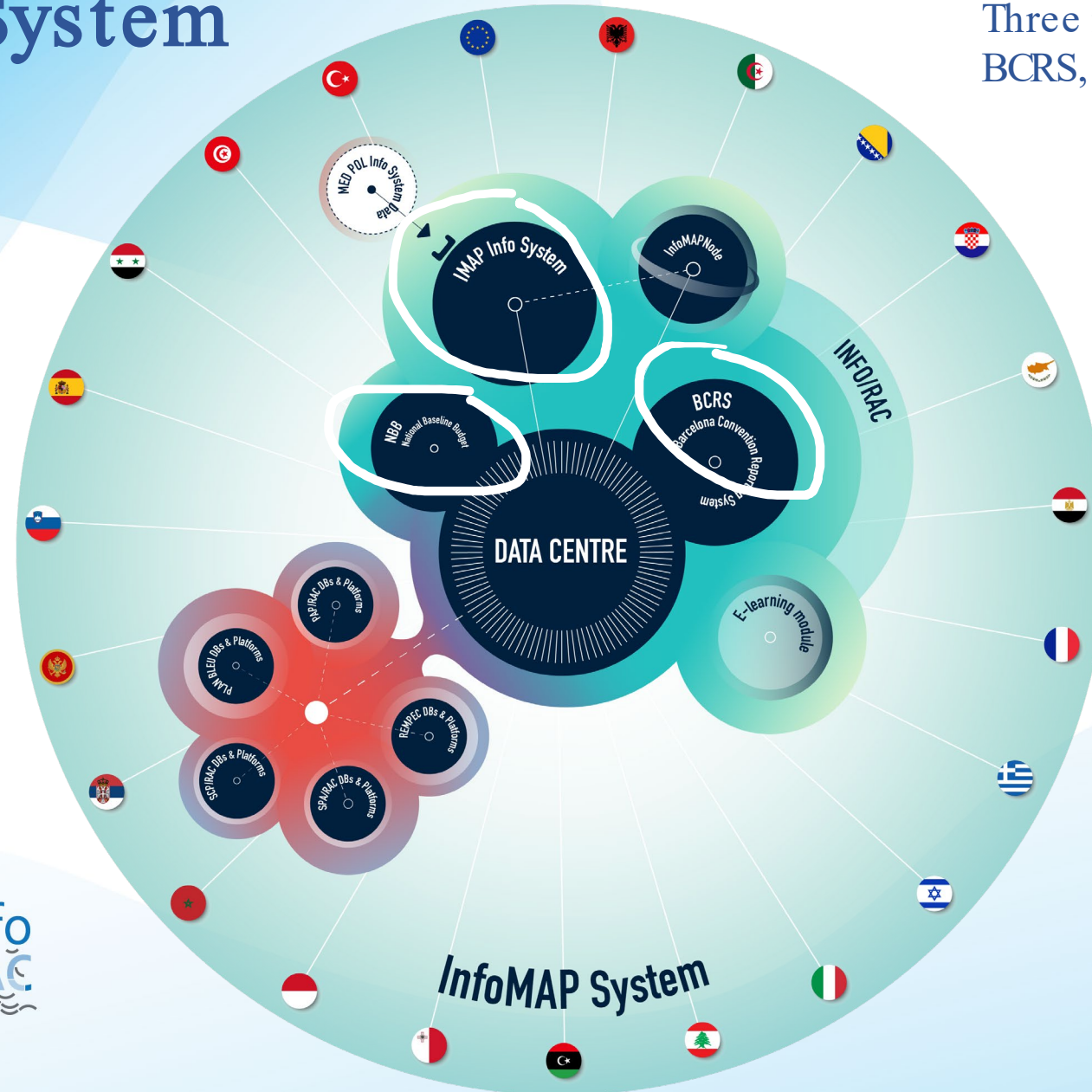
The Information and Communication Regional Activity Center of UNEP-MAP (INFO/RAC) has the mandate to set up the technological infrastructure and manage all the data flows of UNEP-MAP



# The InfoMAP System

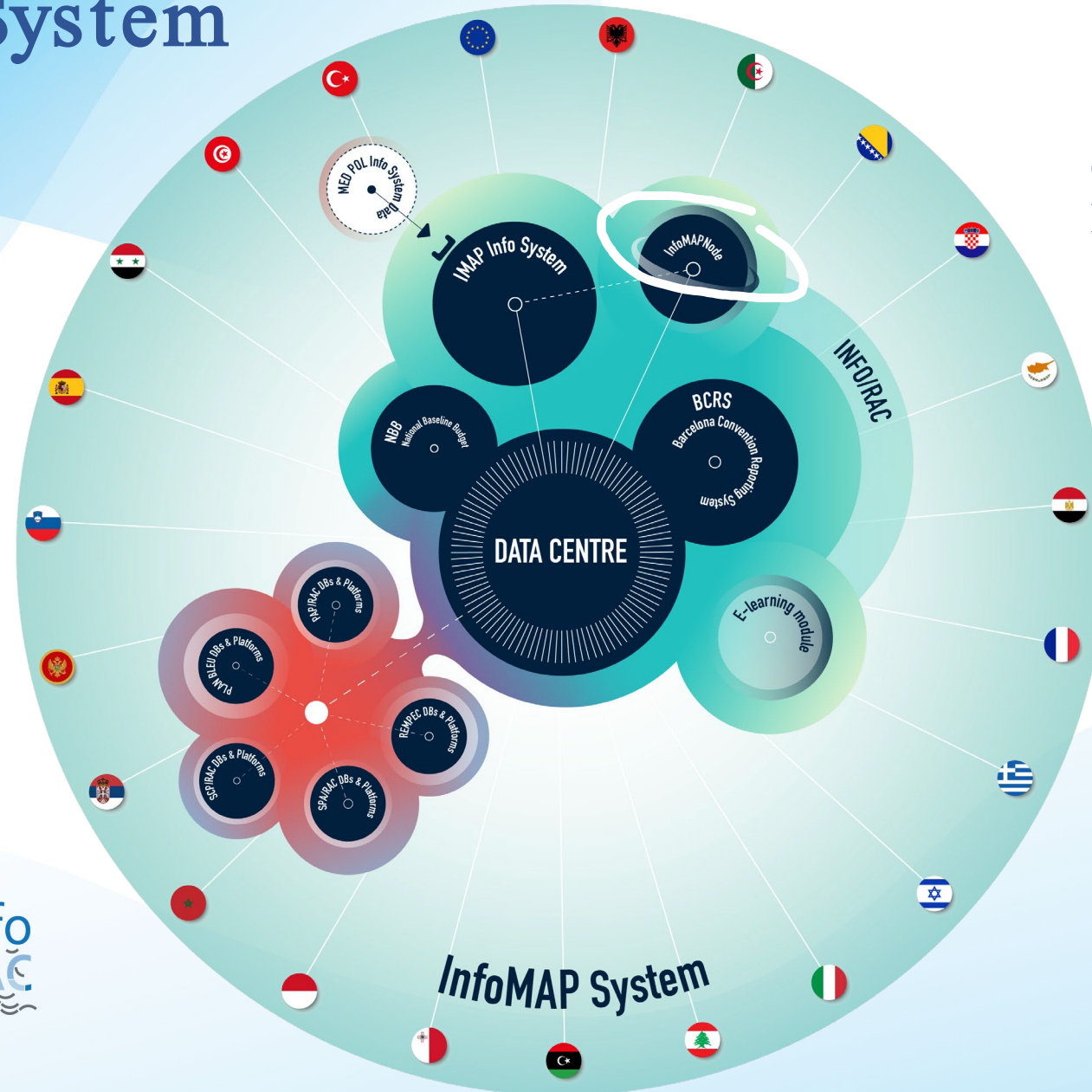
The Information and Communication Regional Activity Center of UNEP-MAP (INFO/RAC) has the mandate to set up the technological infrastructure and manage all the data flows of UNEP-MAP

Three mandatory data flows:  
BCRS, NBB, IMAP Info System



# The InfoMAP System

The Information and Communication Regional Activity Center of UNEP-MAP (INFO/RAC) has the mandate to set up the technological infrastructure and manage all the data flows of UNEP-MAP



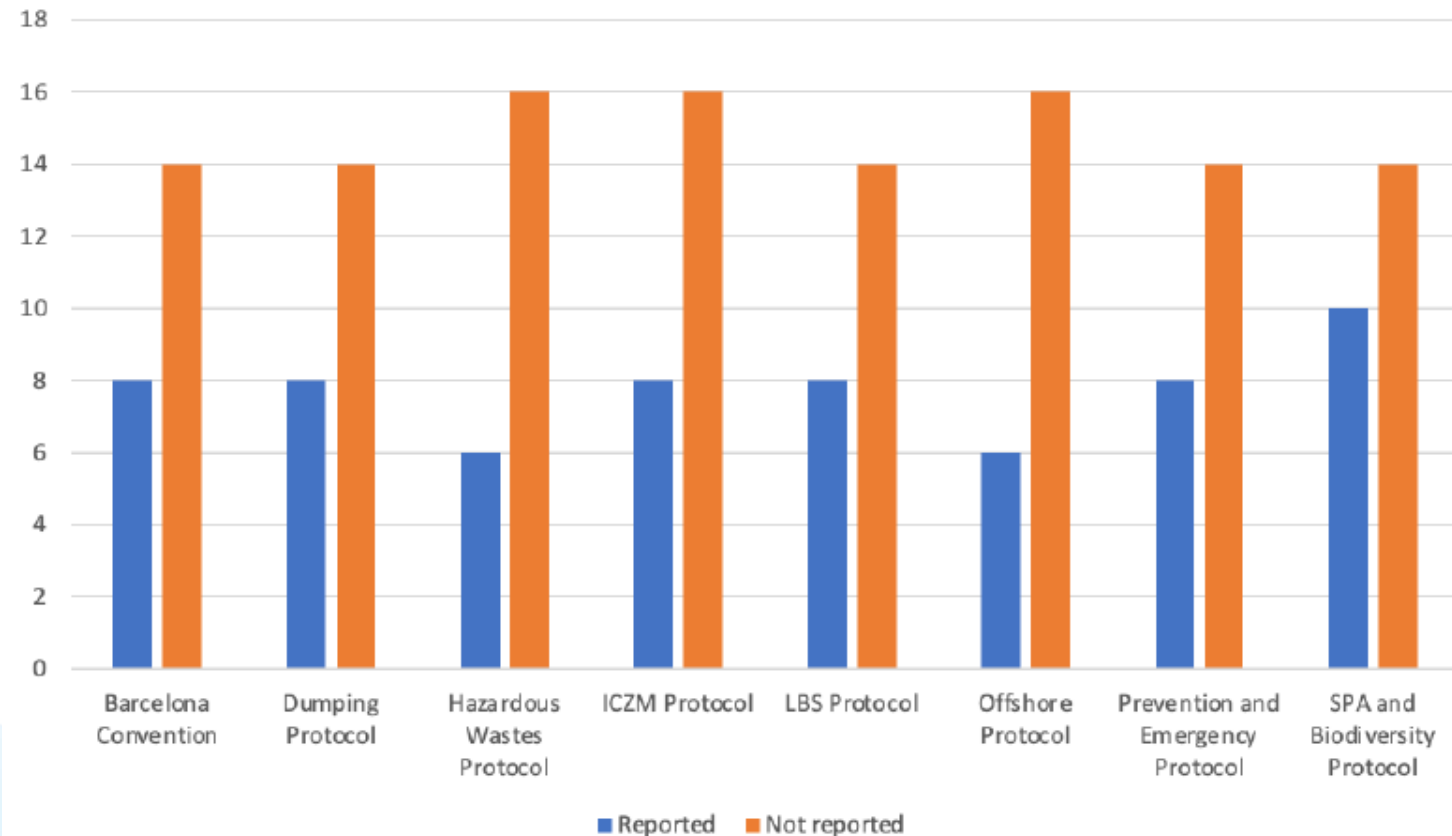
One optional data flow:  
InfoMAPNode > KMaP

# The Barcelona Convention Reporting System (BCRS)

BCRS (Barcelona Convention Reporting System, <https://idc.info-rac.org/bcrs>) is the reporting system which collects reports from **different protocols** under article 26 of the amended Barcelona Convention and several articles of different Protocols of Mediterranean Action Plan:

- Barcelona Convention
- Dumping Protocol
- Hazardous Wastes Protocol
- ICZM Protocol
- LBS Protocol
- Offshore Protocol
- Prevention and Emergency Protocol
- SPA and Biodiversity Protocol

Source: Di Stefano, C. (2023, June 9). infoMAP Data Centre and BCRS Dataflow. Zenodo. <https://doi.org/10.5281/zenodo.8020895>



Mediterranean  
Action Plan  
Barcelona  
Convention



# The National Baseline Budget (NBB)

National Baseline Budget (NBB) is an **inventory of annual pollutant's loads** released by all significant Land Based Sources at country level.

National Baseline Budget meets the obligations established by the **LBS protocol**, monitoring the trend, on a five-year basis, of the pollutant loads discharged into marine environment.

In 2018, in order to support this data flow obligation, INFO/RAC has implemented the National Baseline Budget reporting system flow, available at: <https://idc.info-rac.org/nbb>

Source: Catini, F. (2023, June 9). National Baseline Budget (NBB). Zenodo. <https://doi.org/10.5281/zenodo.8020920>



Mediterranean  
Action Plan  
Barcelona  
Convention



## National Baseline Budget (NBB)

Reporting Format for the National Baseline Budget

Home / NBB

NBB General info on the system

Reporting instructions

Emission factors developed by MEDPOL

European PRTR

Albania	Greece	Morocco
Algeria	Israel	Slovenia
Bosnia Herzegovina	Italy	Spain
Croatia	Lebanon	Syria
Cyprus	Libya	Tunisia

# The IMAP Info System

IMAP Info System, developed by INFO/RAC, aims to **collect, manage and share data from monitoring programs** under the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) in the framework of Barcelona Convention.

The System allows Contracting Parties to report on data related to the **Common Indicators (CIs)**.

IMAP Info System website is **accessible** to the general public. Also dashboards showcasing data are available. Login for Contracting Parties (CPs) and MAP users is required to access the reserved sections.

Source: Catini, F. (2023, June 9). IMAP Info System. Zenodo. <https://doi.org/10.5281/zenodo.8020955>



Mediterranean  
Action Plan  
Barcelona  
Convention





# The InfoMAPNode

InfoMAPNode is an **open source geoportal** for sharing different levels of geospatial data and maps and to expose all relevant metadata in the Mediterranean Area, with a specific focus on Barcelona Convention.

InfoMAPNode represents the entry point for InfoMAP Spatial Data and Metadata catalogue, allowing to import **remote services** from UNEP/MAP SDI as well as the other RACs spatial information systems.

InfoMAPNode provides **free and accessible SDI for CPs and National purpose**, allowing to create map using spatial information from different sources and supporting decision makers and public authority

Source: Lotti, A. (2023, June 9). InfoMAPNode - The geoportal for sharing geospatial data. Zenodo.  
<https://doi.org/10.5281/zenodo.8020935>



Mediterranean  
Action Plan  
Barcelona  
Convention



The screenshot shows the InfoMAPNode website interface. At the top, there are logos for UNEP, the Mediterranean Action Plan, and InfoRAC, along with a search bar and a 'Sign in' link. The main content area features a large 'Welcome' heading over a scenic background image of a coastline. Below the heading, there is a paragraph explaining the portal's purpose and a link to the 'System manager'. A navigation bar at the bottom of the main content area includes links for 'Data', 'Maps', 'GeoStories', 'Dashboards', and 'Featured'. Below this, a 'Dataset Themes' section displays seven icons representing different environmental and marine topics: Pollution, Marine Biodiversity, Sustainability and Blue Economy, Climate Change, Marine Spatial Planning, Fishery and Aquaculture, and Governance. At the very bottom, there is a filter bar indicating '425 Resources found' and an 'Order by' dropdown menu.

# The UNEP-MAP data policy: adoption

## Adoption of the Data Policy:

[UNEP/MED IG.25/27, Decision IG.25/10](#) (p. 353)

- Approved during the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22nd Meeting
- Aim to achieve a base level of legal interoperability
- Establishing base principles, objectives and means to achieve this interoperability for each data flow belonging to the MAP

### **Decision IG.25/10**

#### **MAP Data Policy**

*The Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22<sup>nd</sup> Meeting,*

*Considering* Decision IG.17/5 on the governance of the UNEP/MAP-Barcelona Convention system, adopted by the Contracting Parties at their 15<sup>th</sup> Meeting (COP 15) (Almeria, Spain, 15-18 January 2008), and Decision IG.19/6 on the Mediterranean Action Plan Civil Society Cooperation and Partnership, adopted by the Contracting Parties at their 16<sup>th</sup> Meeting (COP 16) (Marrakesh, Morocco, 3-5 November 2009),

*Considering further* Decisions IG.20/13, IG.21/13, IG.23/3 and IG.24/2 on governance, adopted by the Contracting Parties at their 17<sup>th</sup> (COP 17) (Paris, France, 8-10 February 2012), 18<sup>th</sup> (COP 18) (Istanbul, Turkey, 3-6 December 2013), 20<sup>th</sup> (COP 20) (Tirana, Albania, 17-20 December 2017), and 21<sup>st</sup> (COP 21) (Naples, Italy, 2-5 December 2019) Meetings respectively,

*Recalling* the mandate of INFO/RAC, as laid down in Decision IG.19/5 on the Mandates of the Components of MAP, adopted by the Contracting Parties at their 16<sup>th</sup> Meeting (COP16) (Marrakesh, Morocco, 3-5 November 2009), and its relevance to the implementation of this Decision,

*Acknowledging* the importance to apply the UNEP/MAP Data Policy in the data managed by the UNEP/MAP Barcelona Convention System in order to achieve a base level of legal interoperability,

1. *Adopt* the United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP) Data Policy as set out in Annex I to the present Decision;
2. *Request* the Secretariat (INFO/RAC) to provide the necessary technical support to Contracting Parties and to address any needs identified to fully implement the UNEP/MAP Data Policy;
3. *Call upon* the Contracting Parties to take effective measures to implement the UNEP/MAP Data Policy.

# The UNEP-MAP data policy: mission

**Support**  
**Promote**  
**Enable**

meeting relevant  
national legislations

recognition of  
intellectual  
property rights

Constraints

interoperability and  
use of standards

full, free and  
open access

re-use of data  
from different  
sources

implementation of INSPIRE, SEIS  
principles, Copernicus and GEOSS  
data sharing principles

Principles

quality assurance  
and quality control  
procedures

availability of latest  
data and maintenance  
of long-term series

protection of integrity,  
transparency, and  
traceability of  
environmental data

Qualities of  
the elements

publication of  
metadata

research data  
stewardship

citizen  
science data

Elements  
involved



Mediterranean  
Action Plan  
Barcelona  
Convention



# The UNEP-MAP data policy: principles

**GENERAL:** Data should be managed as close as possible to its source, collected once, shared with others, readily available to fulfil UNEP-MAP mandate. (p.356)

**A. Interoperability and use of Standards:** **Interoperability** means that any piece of information can be shared among multiple actors with the same quality level (quality of instruments, quality of information, quality of elaboration). This is possible only by means of **Standards**: «universally» recognised rules to share information.

**B. Open Access:** Data must be as open as possible, respecting the constraints imposed by local legislation, sensitivity of data, and copyrights. To formalize Open Access we need **Open Data licenses**.

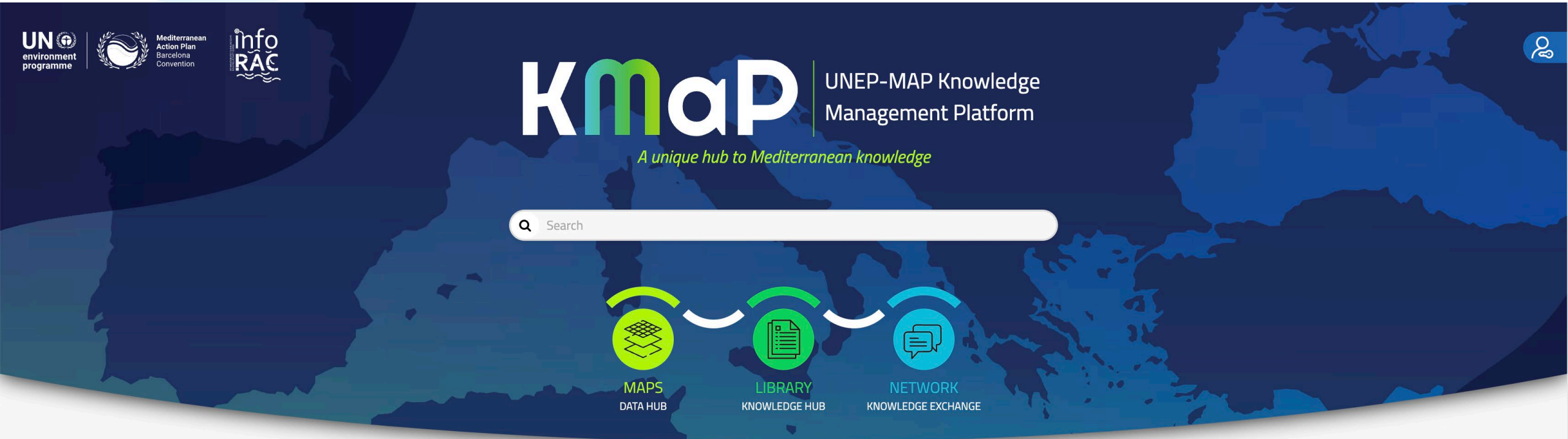
**C. Re-use of data:** Since we don't want to duplicate efforts, data must be enabled to be **reused, exploited and recombined** from different sources to different frameworks and media. To this purpose (meta)data should have **relevant attributes** and a detailed **provenance**, together with appropriate **license** and meeting domain-specific standards.

# KMaP: a data policy implementation

The MAP Knowledge Management Platform (KMaP) aims to become the unique access point to UNEP-MAP knowledge heritage, following commitments of the adopted Data Policy.

The actual proptoytpe is made by two parts:

1. **Data Hub**: managing «geographical objects»
2. **Knowledge Hub**: managing «non-geographical objects» (documents, videos, leaflets, etc.)



The image shows a banner for the KMaP platform. On the left, there are logos for the UN Environment Programme, the Mediterranean Action Plan Barcelona Convention, and infoRAC. The main text reads 'KMaP' in a stylized font, with 'UNEP-MAP Knowledge Management Platform' to its right. Below this is the tagline 'A unique hub to Mediterranean knowledge'. A search bar is positioned below the tagline. At the bottom, three icons are connected by a line: a map icon labeled 'MAPS DATA HUB', a document icon labeled 'LIBRARY KNOWLEDGE HUB', and a speech bubble icon labeled 'NETWORK KNOWLEDGE EXCHANGE'. A small 'info' icon is in the top right corner.

UN environment programme | Mediterranean Action Plan Barcelona Convention | infoRAC

# KMaP

UNEP-MAP Knowledge Management Platform

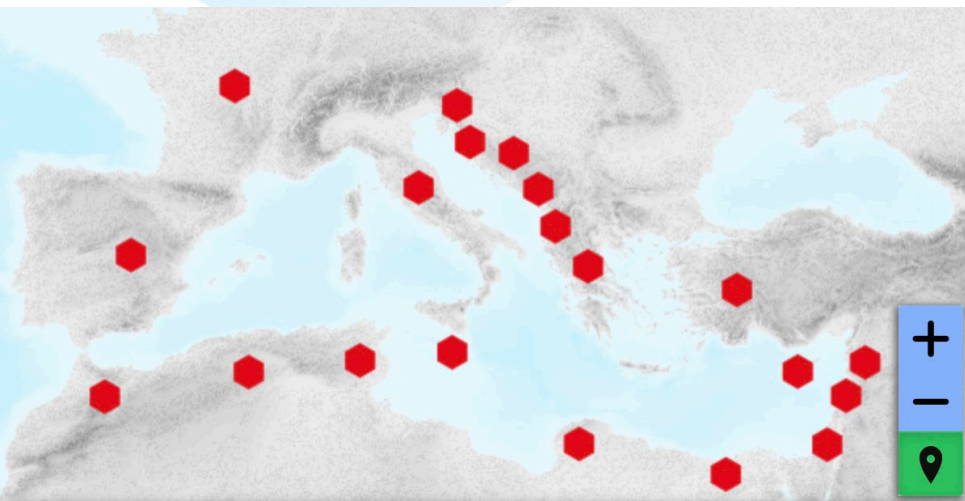
*A unique hub to Mediterranean knowledge*

Search

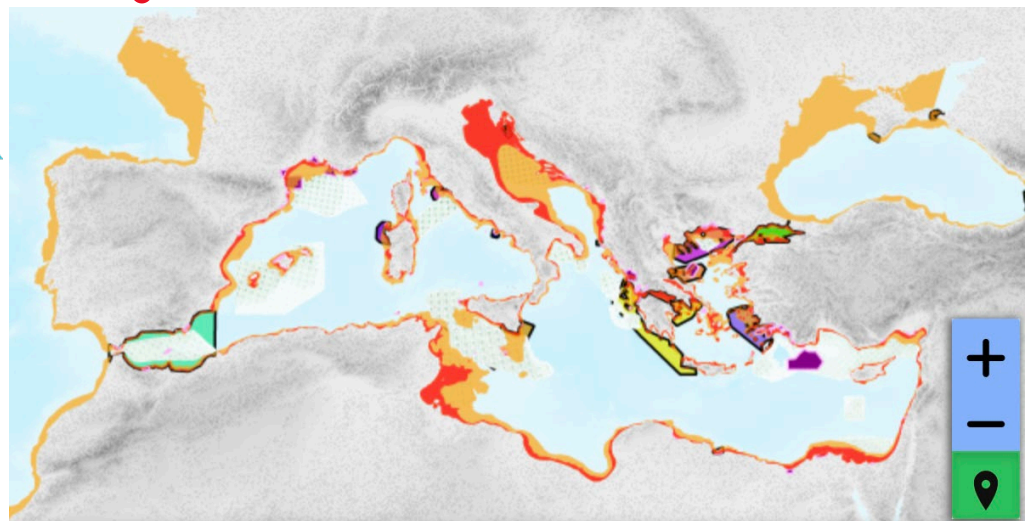
MAPS DATA HUB | LIBRARY KNOWLEDGE HUB | NETWORK KNOWLEDGE EXCHANGE

# KMaP products: layers and maps

A **Layer** is a single dataset (e.g. 1 shapefile)



A **Map** is a superimposition of layers resulting in a combination of datasets, with a specific communication aim (data in context)



## Coastday - past events

  [View dataset](#)

 a dataset from PAPERAC - / May 12th 2023

This dataset refers to all the past [Coastday](#) events country by country. Coastday is an event of awareness rising organized yearly by PAP/RAC and involves Contracting Parties from the whole MAP.

Category: [MSP](#)

## Species distribution analysis

 [View map](#)

 a map from INFORAC Editor / February 13th 2023

Spatial analysis of species distribution by crossing SPAMI areas, species distributions of horse mackerel and Mediterranean mussel.

Category: [Species](#)

# KMaP products: documents

Documents have been linked to their sources, not harvested  
Sources are: RAC's libraries, UNEP and UNEP-MAP libraries  
accounting for more than 16k documents.

The library implements a full text search able to retrieve  
documents also based on their content.

Each resource can be linked to other  
resources, i.e. other language versions of  
the same document, documents from the  
same meeting, documents and data from  
the same project

The screenshot displays a document viewer interface. At the top, there are navigation options: 'View', 'Share', and 'Download'. Below this, a dark header bar contains a menu icon, a document ID 'f2742620-81a0-42c3-ad62-59b3f95cca9a', and page navigation controls showing '1 / 25' and '98%' zoom. The main content area shows a PDF document with a cover page titled 'ADAPTER LES VILLES ET LES TERRITOIRES CÔTIERS À L'ÉLEVATION DU NIVEAU DE LA MER EN MÉDITERRANÉE'. A sidebar on the left shows a thumbnail gallery with three items labeled '1', '2', and '3'. A red box highlights a 'Linked Resources' panel on the right. This panel has tabs for 'Info', 'Location', and 'Linked Resources'. Under 'Linked Resources', there are two sections: 'Linked To' and 'Linked By'. Each section lists two identical entries: 'Mediterranean forests: Towards a better recognition of the economic and social value of goods and services through participative governance - EN' and 'Mediterranean forests: Towards a better recognition of the economic and social value of goods and services through participative governance - AR'. A red arrow points from the top right towards the 'Linked Resources' panel.

# KMaP products: remote services

KMaP links many remote layers from other portals and, conversely, KMaP public geographic data is available to be shared by means of remote services working with OGC standards WMS and WFS: in this way other portals/platforms, but also desktop GIS, can exploit UNEP-MAP data

The screenshot shows the GeoServer web interface. The browser address bar is `kmap.info-rac.org/geoserver/web/?0`. The page is titled "Welcome" and shows the following statistics:

- 229 Layer
- 0 Layer groups
- 29 Stores
- 4 Workspaces

There are also several warning and information messages, such as "The default user/group service should use digest password encoding." and "Strong cryptography available".

The interface is divided into several sections:

- About & Status:** Server Status, GeoServer Logs, Contact Information, Informazioni su GeoServer, Process status.
- Data:** Layer Preview, Import Data, Workspaces, Stores, Layer, Layer Groups, Still, Backup & Restore.
- Services:** WCS, WFS, WMS, WMTS, WPS.
- Settings:** Global, Image Processing, Raster Access, Importer.
- Tile Caching:** Tile Layers, Caching Defaults, Gridsets, Disk Quota, BlobStores.
- Sicurezza:** Settings.

Key service configurations shown:

- GeoNode Local GeoServer:** WMS 1.3.0, WMS 1.1.1.
- GeoServer Web Map Tile Service:** TMS 1.0.0, WMS-C 1.1.1, WMTS 1.1.1.
- My GeoServer WFS:** WFS 2.0.0, WFS 1.1.0, WFS 1.0.0.
- My GeoServer WCS:** (Description: This is a description of your Web Coverage Server.)



Mediterranean  
Action Plan  
Barcelona  
Convention

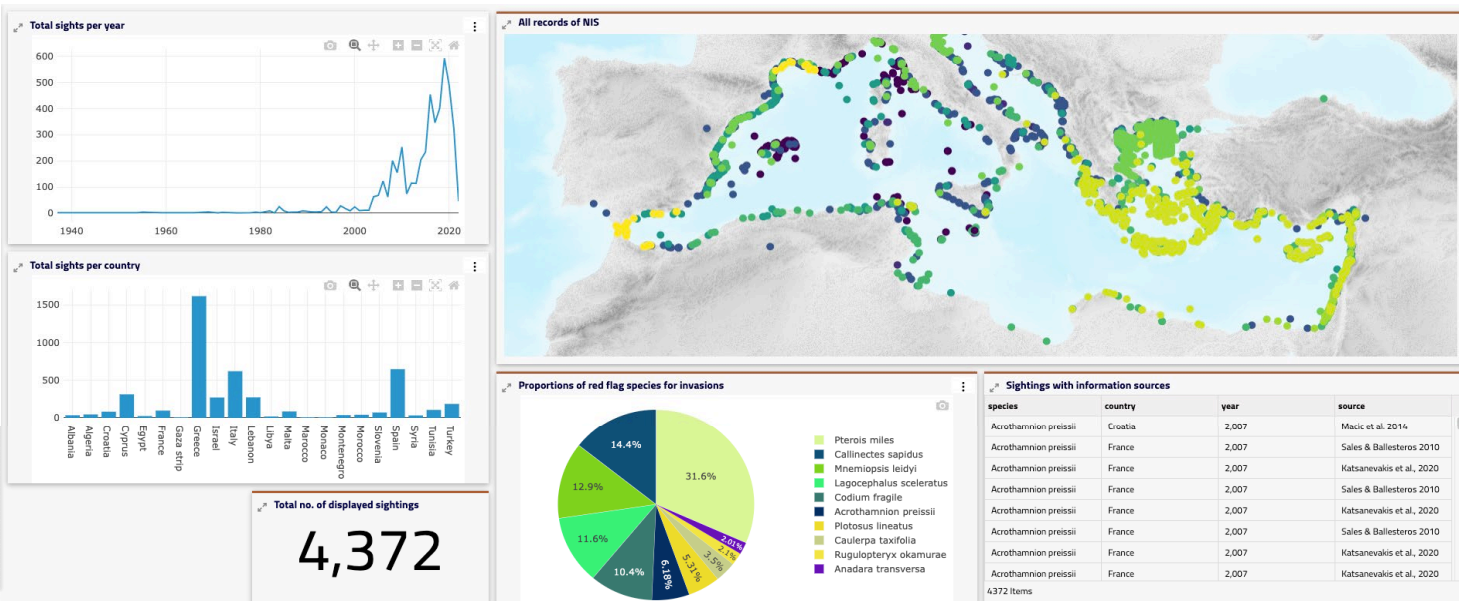
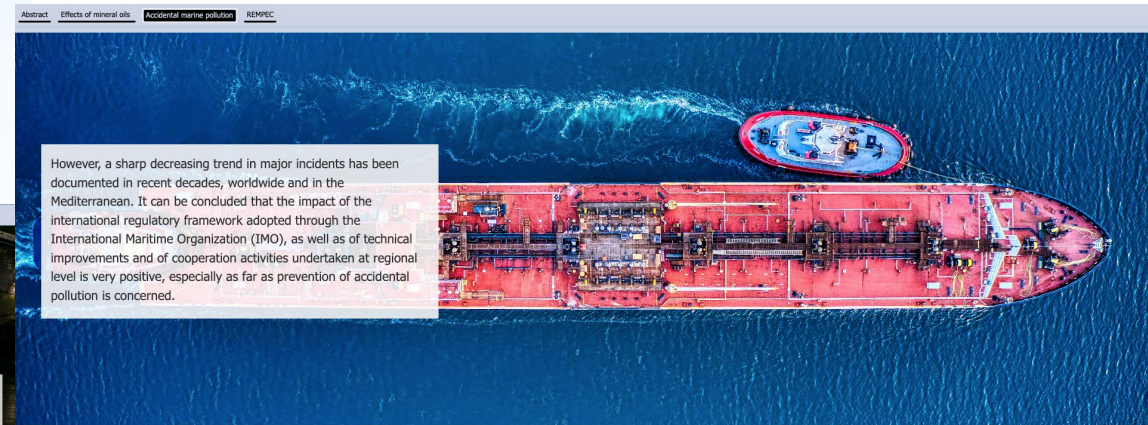
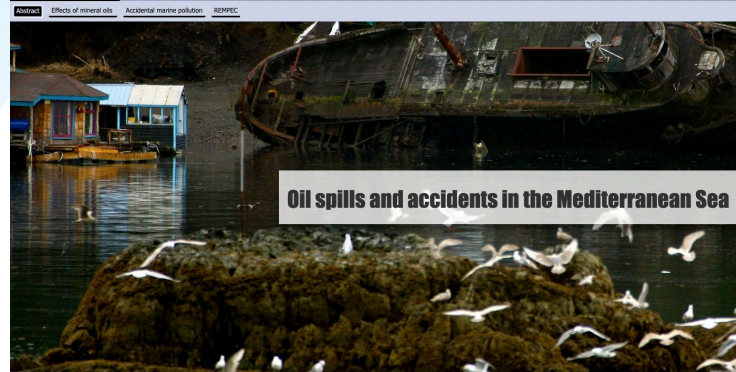




# KMaP products: geostories and dashboards

GeoStories are powerful divulgation instruments that combine text, interactive maps, and other multimedia content like images and video or other third-party contents

Efficient to present ideas supported by geographical and non geographical data!

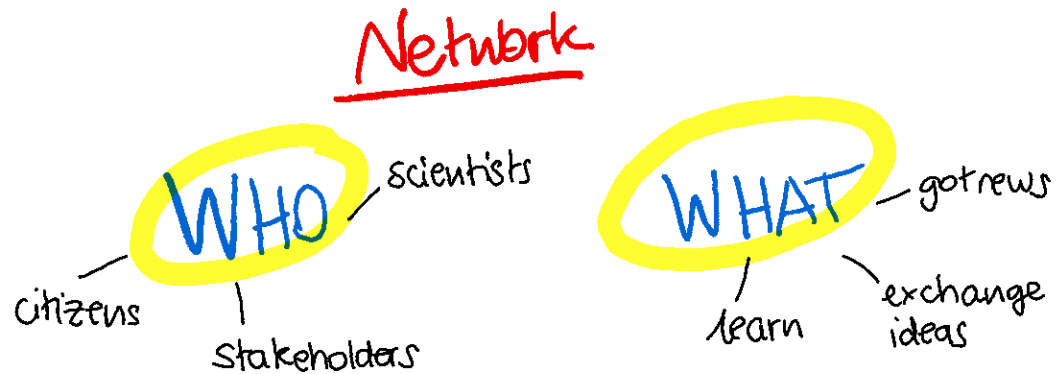


Dashboards provide charts, maps, tables, texts and counters attached to datasets with the aim to visualize specific data in context, interact spatially and analytically with the data by creating connections between widgets.

Useful to have a rapid outlook on data!

# Future perspectives: the Knowledge Exchange Hub

To be implemented in the next year, the Knowledge Exchange Hub it is a place where decision makers, stakeholders, communities of interest and citizens can virtually meet UNEP-MAP.



## Contents:

- if you are a citizen:
- Seawatcher app link
  - Interactive games
  - link to divulgation channels

- if you are a stakeholder:
- forum
  - helpdesk
  - PMT

- if you are a scientist:
- KH filtered contents
  - DH filtered contents
  - Jupyter lab (IMAP)

- Elearning platform:
- training
  - workshops
  - webinars

Designed around users' needs, it will give the possibility to:

- Better **explore** UNEP-MAP data
- **Got news** on activities and datasets
- **Get trained** on data and platform
- Keep a **link with scientific community** about UNEP-MAP hot topics
- Make available **further instruments to interpret data** in context, to gather information

# THANK YOU FOR YOUR ATTENTION

Annalisa Minelli (INFO/ RAC)

[annalisa.Minelli@info-rac.org](mailto:annalisa.Minelli@info-rac.org)



Mediterranean  
Action Plan  
Barcelona  
Convention

